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INCREASED PRODUCTIVITY THROUGH IMPROVED TECHNICAL TRAINING. (U)
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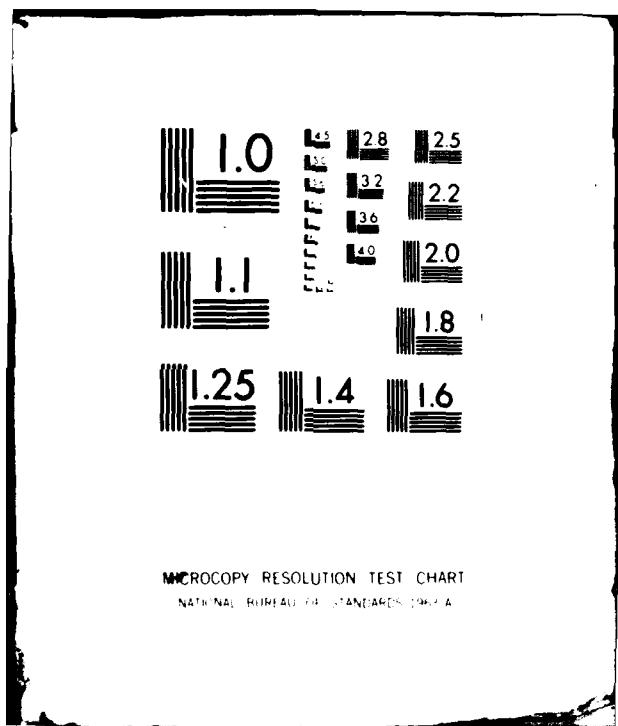
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USAF PRAM PROGRAM FINAL REPORT.

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Warner Robins Air Logistics Center

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E113-1098

Robins Air Force Base, Georgia

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Increased Productivity Through Improved Technical Training.

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AUG 1977

APPROVED:

WILLIAM J. BECKER

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Vice Commander
Warner Robins Air Logistics Center
Robins Air Force Base, Georgia

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PROJECT NO: WR-6135-1
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INTRODUCTION

During the week 12-16 January 1976, personnel from the ASD PRAM Office visited this ALC to explore methods of improving Maintenance Productivity. Numerous areas were discussed with the one area of training standing out as possibly being the biggest cost saver for the least investment.

Warner Robins was requested to undertake the project on training by the Hq ASD PRAM Office.

Texas Instrument Learning Center was contacted and provided costing information on videotape lessons. Further, a TDY trip to Eastfield College, Dallas, Texas provided advantages and disadvantages of CCTV for electronics fundamental training.

PRAM Project WR6135-1

Increased Productivity Through Improved Technical Training

A. Executive Summary

1. Electronics mechanics in the Avionics Division, MAI, undergo a 3-year apprentice program to develop the necessary skills to repair complex electronic equipment. The total program encompasses 1,380 classroom hours. Presently live instruction is the method used to present the course material.

2. The present method of training electronics mechanics is extremely expensive creating many hours of lost production time. The 1,380 hours classroom time plus the necessary travel time to and from class amounts to approximately one-third of each apprentice's available productive time during the 3-year duration of the program. Obviously, the Avionics Division's productivity could be increased by reducing classroom time for the apprentice program, thereby increasing the time available for actual productive work. To achieve this, video tape instruction coupled with minimum live instruction was proposed. Course tapes on "Semi-Conductors" and "D.C. Electricity" were purchased and a service test of the proposed method was scheduled.

3. The service test has been completed with the following results:

(a) The "Semi-Conductors" video tape course was determined to be too broad and general. While it provides a good introductory film to the course, it is not sufficient to be used as the basis for the course presentation.

(b) The "D.C. Electricity" video tape course did achieve the desired results of providing qualified electronics mechanics with less classroom hours. A 15 percent reduction of classroom time for each student trained was achieved during the service test. Additionally, Mr. Charles Wood, Chief of the Avionics Training Center, stated that the 15 percent reduction in course time should improve as the instructor learns to rely more on the film for presenting the course material.

4. The cost to purchase the necessary equipment and course materials required to implement the service test amount to \$11,794. Based on the current projection of 60 students to be trained per year, the projected 5-year net savings will be \$15,806.

RECOMMENDATION: Each ALCs Civilian Training Office within the Personnel Division should screen their training processes for application of video tape courses in lieu of live instruction.

B. Economic Summary

1. Project Cost

<u>ITEM</u>	<u>COST</u>
Complete Texas Instruments "Understanding Semiconductors" course consisting of 12x60 minute video tape lessons in 3/4" cassette format and 25 lesson summaries; complete Texas Instruments "Basic Electricity and DC Circuits" lecture video tape course consisting of 14x30 minutes video tape lessons in 3/4" color cassette format and 25 student texts; complete Texas Instruments "Basic Electricity and DC Circuits" 15 lab sessions in eight video tapes and 25 lab manuals; two Panasonic NV-2110M 3/4" cassette video tape players.	\$11,265.00

TDY trip for (2) to Eastfield College, Dallas, Texas, to attend conference on advantages and disadvantages of Closed Circuit Television (CCTV) for electronics fundamentals training.

529.00

Total Project Cost: \$11,794.00

2. Computation of Savings

Before: 60 Students/yr X 131.5 hrs/	=	\$36,846.00
student X \$4.67/hr		
After: 60 Students/yr X 111.8 hrs/	=	<u>31,326.00</u>
student X \$4.67/hr		
Average Gross Annual Savings		\$ 5,520.00

3. Savings by FY (5 years)

FY78	\$ 5,520.00
FY79	<u>5,520.00</u>
FY80	<u>5,520.00</u>
FY81	<u>5,520.00</u>
FY82	<u>5,520.00</u>
5-year Total Gross Savings	\$27,600.00
Project Cost	<u>11,794.00</u>
5-year Total Net Savings	\$15,806.00

3. Savings by FY (5 years)

FY 78	\$ 5,520.00
FY 79	5,520.00
FY 80	5,520.00
FY 81	5,520.00
FY 82	<u>5,520.00</u>

5-year Total Gross Savings	\$ 27,600.00
Project Cost	<u>11,794.00</u>

5-year Total Net Savings	\$ 15,806.00
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C. Audit Trail

Results of this project will be audited by reviewing the Avionics Training Center's records for number of students trained in this course and the length of time in the classroom.

D. Approval and Coordination

<u>TASK</u>	<u>TITLE</u>	<u>OPR SYMBOL</u>	<u>DIVISION LEVEL SIGNATURE</u>
1.	Provide XRS a report of the number of students trained in DC Electricity Course and length of course (hrs). Reports due 1 Jan 78, 1 Jul 78, 1 Jan 79, and 1 Jul 79.	MAIPE BRANNAN WOODHAM	Chief, Electronics Division Directorate of Maintenance
2.	Compute semi-annual savings based on MAIPE input data and forward to PRAM Office.	XRS H. E. ESCHER	Chief Logistics Research and Systems Division Directorate of Maintenance
3.	Summary of audit results to ASD/RA by 1 Feb and 1 Aug each year.	RA W. R. ELLIOTT	W. R. Elliott PRAM Program Director

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2.	Compute semi-annual savings based on MAIPE input data and forward to PRAM Office.	XRS	H.E. Eschen, Chief Log Research & Sys Division Directorate, Plans and Programs
3.	Summary of audit results to ASD/RA by 1 Feb and 1 Aug each year.	RA	W. R. Elliott PRAM Program Director

28 JUL 1978

GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM

GENERAL DOCUMENT SUMMARY SHEET

1 OF 1

Please Type All Information - See Instructions on Reverse

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3. APPLICATION LOGISTICS	4. MFR NOTIFICATION <input type="checkbox"/> NOTIFIED <input checked="" type="checkbox"/> NOT APPLICABLE
6. ORIGINATOR'S DOCUMENT TITLE Increased Productivity Through Improved Technical Training	8. DOCUMENT ISSUE Month/Year AUG 1977
7. ORIGINATOR'S DOCUMENT NUMBER WR-6135-1	9. ORIGINATOR'S PART NAME/IDENTIFICATION PRAM PROGRAM
10. DOCUMENT (SUPERSEDES) (SUPPLEMENTS) ACCESS NO. NONE	11. ENVIRONMENTAL EXPOSURE CODES N/A
12. MANUFACTURER N/A	13. MANUFACTURER PART NUMBER -----
14. INDUSTRY/GOVERNMENT STANDARD NUMBER	

15. OUTLINE, TABLE OF CONTENTS, SUMMARY, OR EQUIVALENT DESCRIPTION

→ The present method of training electronics mechanics is extremely expensive creating many hours of lost production time. To improve this, video tape instruction coupled with minimum live instruction was proposed. Equipment and course materials for a - the service test cost - \$11,794. Based on the current projection of 60 students to be trained per year, the projected 5-year net savings will be \$15,806.

RECOMMENDATION: → Each ALCs Civilian Training Office within the Personnel Division should screen their training processes for application of video tape courses in lieu of live instruction.

16. KEY WORDS FOR INDEXING

PRAM; AVIONICS; INSTRUCTION; VIDEO TAPE INSTRUCTION; AUDIO-VISUAL; (Doc Des-G)

17. GIDEP REPRESENTATIVE

WILLIE L. DANIELS

18. U.S. AIR FORCE, HQS WARNER ROBINS AIR
LOGISTICS CENTER, ROBINS AFB, GA 31093 (WR)

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- 4 Device manufacturer must be notified of test results. Manufacturer approval of report is not required--include pertinent manufacturer correspondence with document submittal to GIDEP; check NOTIFIED entry. If document is for a nonstandard part or of a general nature and a manufacturer is not identified, check NOT APPLICABLE.
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- 13 Enter complete part number. Use open O for alpha letter O, and use 0 for numeric zero. If more than one part number, enter phrase, SEE BOX 15; enter additional part number(s). If a part number is not specified, enter four dashes (----).
- 14 Enter standard part number such as the 1N or 2N--diode and transistor designators. For GIDEP purposes, any military assigned number is considered as a government standard part number. If more than one standard number, enter phrase SEE BOX 15; enter additional standard number(s).
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